



Chapter 1

Introduction

Purpose of Plan

In 2000, the Lake County Board adopted the North Branch of the Chicago River Watershed Assessment and Management Plan for Lake County, Illinois (Watershed Plan). As a follow-up to this report, in 2001 the North Branch Planning Committee (planning committee) recommended creating a detailed Open Space Plan for the North Branch from its headwaters in east central Lake County south to Dempster Street in Morton Grove (Cook County), an area of 60,658 acres or roughly 95 square miles (*Figure 1.1*). The planning committee recommended this new plan in order to identify **open space** needed for flood prevention, natural resource protection, and increased recreational opportunities, as well as to identify sites for best management practices for water quality treatment.

Open Space: Undeveloped land providing some or all of the following benefits:

- preservation of natural habitat
- protection of floodplain, wetlands, and other natural resources
- provision of outdoor recreation
- resource protection, such as water quality
- collectively makes up green infrastructure (see next page)

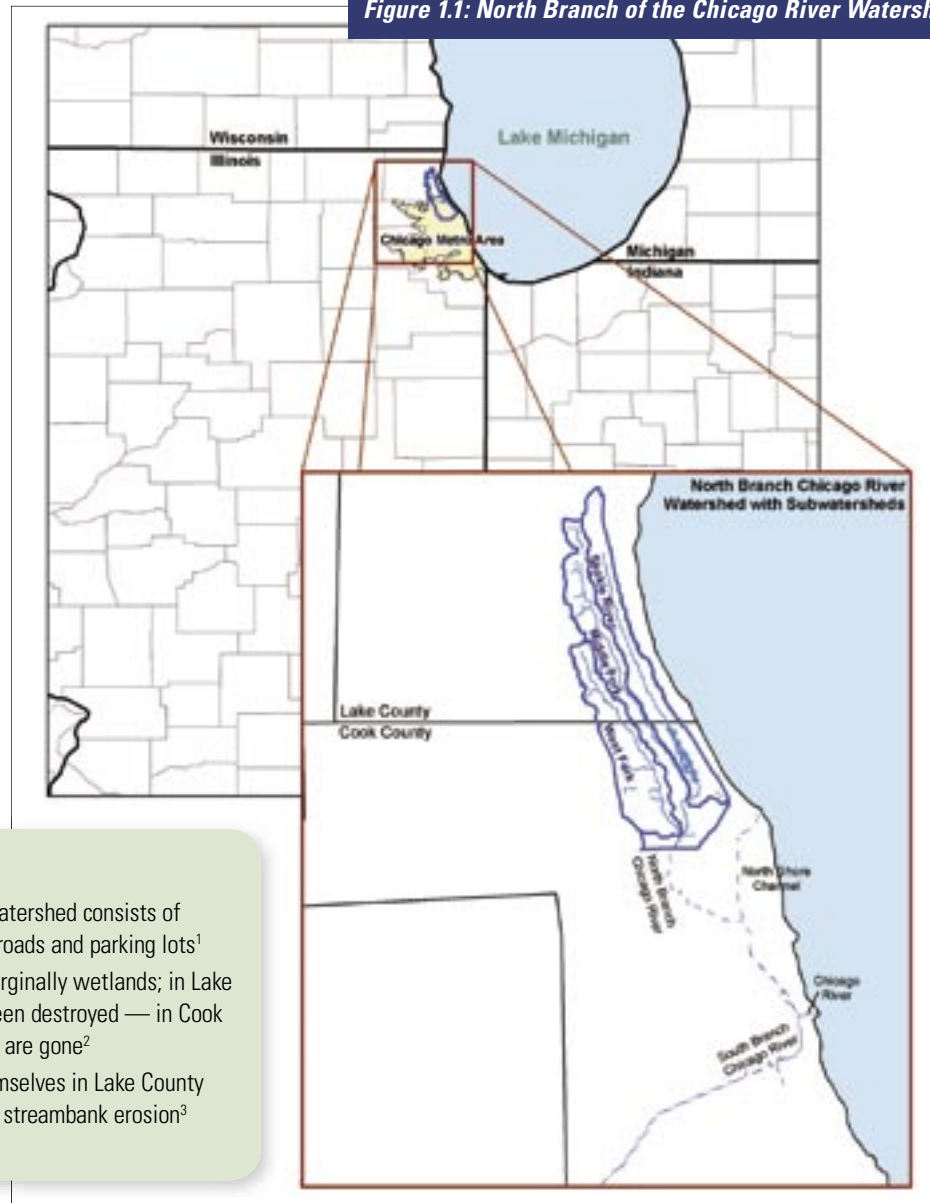
Open space can exist as large blocks of open land. However it can also exist as green linear strips, providing streambank protection, corridors for wildlife migration, and trail opportunities to connect isolated existing open spaces.

Infrastructure: *The substructure or underlying foundation, especially the basic installations and facilities on which the continuance and growth of a community depends. Webster's New World Dictionary*

Green Infrastructure: *As used in this planning context, green infrastructure is defined as an interconnected network of green open space that conserves natural ecological values and functions and provides associated benefits to the human population. Green infrastructure helps maintain the health, safety, and ambience of a community in a similar fashion to the built environment, and serves to protect the economic status, health and welfare of all within the watershed.*

This plan locates all remaining open space in the watershed, inventories biodiversity, identifies the most significant parcels for open space preservation, and describes how all parcels might be tied together in an integrated “green infrastructure” system providing improved water quality, flood damage reduction, increased public recreation, and protection of natural resources.

Figure 1.1: North Branch of the Chicago River Watershed



Sidebar

The Watershed, 2000

Approximately 28% of the watershed consists of impervious surfaces such as roads and parking lots¹
 30% of the watershed was originally wetlands; in Lake County 55% of these have been destroyed — in Cook County, 81% of the wetlands are gone²
 68% of the river courses themselves in Lake County suffer from moderate to high streambank erosion³

This open space plan comes at the “eleventh hour” for the North Branch of the Chicago River. The watershed is already highly urbanized and developed — according to 1995 land use data, 48% of the watershed was residential at that time. The Watershed Plan preceding this study has detailed the deteriorating condition of the watershed.

¹ *The North Branch of the Chicago River Assessment and Management Plan*, Lake County Stormwater Management Commission, July 2000, Table 3–16, p. 65.

² *Ibid.*, p. 94.

³ *Id.*, Table 3–30, p. 111.

These conditions are only likely to worsen in the years ahead as the 1990 population in the Lake County portion of the watershed where most of the open space is located is expected to increase 45% by 2020 (*Table 1.1*).⁴

On the other hand, significant unprotected open space still remains in the watershed. Research for this open space plan found that 16,962 acres of open space (28% of the watershed) remains. This open space provides the opportunities to mitigate for and correct many of the current problems in the watershed as well as provide more open space for public use and enjoyment. However, only about half of this open space is protected, and what is unprotected is rapidly disappearing as land use conditions change (*Table 1.2 and Figure 1.2*).

Table 1.1: North Branch Chicago River Watershed Project Area Population Change Forecast

Portion of Watershed Area	Population			Change			% Change		
	1990	2000	2020	1990–2000	2000–2020	1990–2020	1990–2000	2000–2020	1990–2020
Lake County	68,957	78,337	99,937	9,380	21,600	30,980	13.60%	27.57%	44.93%
Cook County	119,813	124,709	125,520	4,896	811	5,707	4.09%	0.65%	4.76%
	188,770	203,046	225,457	14,276	22,411	36,687	7.56%	11.04%	19.43%

Source: NIPC (forecast based on improving existing airports alternative)

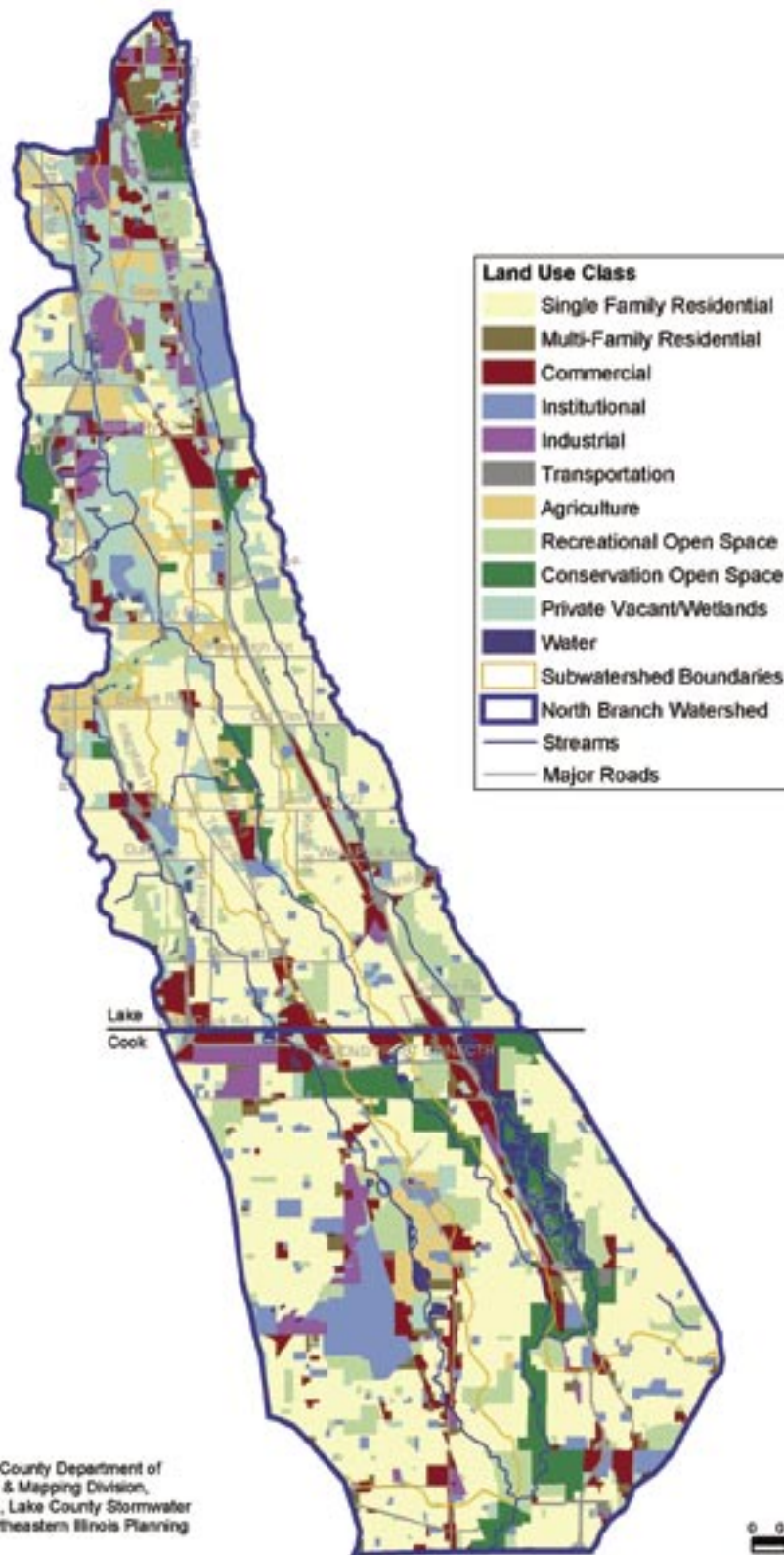
Table 1.2: Land Use Change — 1990 to 1995

Land Use Class	Lake County			Cook County			Watershed		
	1990	1995	% Change	1990	1995	% Change	1990	1995	% Change
Residential	41%	43%	2%	52%	53%	1%	46%	48%	2%
Commercial	6%	7%	1%	9%	8%	-1%	8%	8%	0%
Institutional	4%	4%	0%	9%	8%	-1%	6%	6%	0%
Industrial	4%	4%	0%	2%	3%	1%	3%	4%	1%
Transportation/ Utilities	3%	4%	1%	3%	2%	-1%	3%	3%	0%
Agriculture	9%	7%	-2%	2%	2%	0%	6%	4%	-2%
Open Space	12%	13%	1%	18%	19%	1%	15%	16%	1%
Private Vacant/ Wetlands	20%	17%	-3%	3%	3%	0%	12%	10%	-2%
Water	1%	1%	0%	2%	2%	0%	1%	1%	0%

⁴Id., p. 191.

Figure 1.2: Land Use Conditions — 1995

North Branch Chicago River Watershed



A Brief History of the North Branch

In pre-settlement times the North Branch watershed functioned as a cohesive natural system. Soil, plants, animals and water all existed in equilibrium (*Figure 1.3*). Most of the soils were largely impermeable clays deposited by the last glacier some 10,000 years ago. During its lifetime this glacier had sculpted this watershed into three broad valleys (subwatersheds) characterized by gentle ridge tops and wide, flat bottoms. This relatively level landscape provided thousands of acres of wetlands and wet prairies where sudden downpours could be stored and allowed to infiltrate slowly into the ground. Runoff moved slowly in broad swaths over this flat landscape, just as it does in the Everglades today.

Where sufficient water collected in the bottoms of the North Branch valleys, it created slowly moving, meandering streams, particularly in the easternmost sub-watershed. Here, early explorers found a flowage they named the Skokie River. Its



Figure 1.3: The Middle Fork Valley in Lake Forest, 1907, Jens Jensen

capacity was such that it could be used as a canoe route when Lake Michigan was too rough for travel. The other two subwatersheds, however, showed no discernible channels until well into Cook County, and then only during periods of heavy rain. The North Branch tributaries behaved much as the neighboring Des Plaines River to the west did, as described below:

In the spring it often spread two miles wide, creeping over the flats to the very foot of the hills. At the end of the summer it was a mere ribbon of shallow water ... between wide meadows and waving grasses.⁵

The water was generally clean and pure — early visitors reported much of the Skokie River had a sand and gravel bottom, as opposed to the silt-laden channel it is today. Because of the flat landscape, even large volumes of water from severe storm events moved slowly. The Skokie River west of Winnetka, for instance, (where the Skokie Lagoons and Chicago Botanic Garden now are) in the spring sometimes became a vast body of standing water nearly a mile wide in places (*Figure 1.4*). The view of this landscape in the evening, with the setting sun behind it, was considered one of the most beautiful vistas in the Chicago region.

⁵Meads, J., *How It All Began*, Lake Bluff Historical Society, 1976.

Figure 14: *The Skokie Marsh, 1910,*
attributed to Jens Jensen



This delicate balance of soil, plants, and water in the watershed began to change with the arrival of development in the 1840s. With the exception of a few conservationists, artists and writers — such as the noted landscape architect Jens Jensen, who began advocating the preservation of the Skokie Marsh in 1890 — this flat, water-laden landscape was seen as an impediment to economic progress. Take, for instance, a very early view of farmers and other travelers trying to reach the Lake Michigan coast from the interior of Lake County:

The settlers drove everywhere unhindered, save by the sloughs and streams, and it required close watching, in the maze of tracks, to know which was the right one to follow to reach a given point. Approaching a slough, he sought to avoid the track of every other traveler in order to escape the rut cut through the sod, and so made a wholly new track to the left or the right of those who had preceded, thus adding to the difficulty of finding the correct route.⁶

This observation began a century of human effort to alter the North Branch for its own uses. Early farmers plowed the original prairies, laying bare the ground to erosion. Initially they also dug ditches by hand to drain water from lower areas. Serious drainage efforts on the three forks of the North Branch began in the early 1900s with the introduction of steam-powered equipment. At this time citizens also formed drainage districts: local governmental bodies empowered, with court permission, to levy taxes and undertake drainage work. These drainage districts are still active today in keeping the three forks of the North Branch clear of brush and other debris.

Early drainage efforts on the three forks of the North Branch were insufficient to meet the goal. By the 1930s newer technology existed to complete the job, and all three forks were straightened and their flowage capacity quadrupled in size.

⁶Partridge, C., *A History of Lake County*, Munsell Publishing Co., Chicago, 1902.

Over the years watershed residents also laid hundreds of miles of agricultural farm tiles to drain fields and wetlands. As towns grew, miles of storm sewers were also added. For a time, sanitary lines conveyed waste away from settled areas into adjacent waterways. This problem had become intolerable by the 1960s and was largely corrected under the Clean Water Act in the early 1970s.

Wholesale drainage efforts by private landowners and local authorities ensured however, that water that formerly stayed where it fell, or moved slowly across the landscape, was now collected more quickly and in greater quantity in the main forks. Serious flooding was first noted in 1937 and continues periodically up to the present despite the construction of several large flood control reservoirs in the watershed. In the early 1900s there was even talk of tunneling east to Lake Michigan and completely diverting the North Branch from its ancient course. This idea surfaced again only a few years ago as a possible solution to address periodic flooding by diverting high-frequency stormwater east to Lake Michigan, while still allowing normal flows to drain south to the lower reaches of the North Branch.

Even while these drainage efforts were occurring, however, public interest in preserving the North Branch took root. The Forest Preserve District of Cook County began purchasing lands along the North Branch in the 1920s (Figure 1.5), and eventually assembled a continuous corridor north to the county line. Lake County has continued these efforts from the 1960s to the present.

Interest in restoring the North Branch landscape also took root with the advent of Earth Day in 1970 and the subsequent increase in environmental awareness. The Lake County Forest Preserve District, under the forward-thinking direction of Director Jerrold Soesbe, in 1983 completed the first large-scale restoration of the Skokie River near its headwaters in North Chicago (done with no permits since at the time none were required!) (Figure 1.6). Since then additional restoration projects have been completed on all three forks of the North Branch, and more are currently underway.

Unfortunately, the fact still remains that in much of the North Branch watershed today, uplands have been paved and built over, increasing impervious surfaces and water runoff. Wetlands have been filled or drained, decreasing natural water storage areas. In short, too much water is moving too fast through the North Branch channels.

Water quality was already seriously compromised by the 1930s, when the Forest Preserve District of Cook County built the Skokie Lagoons to ameliorate flooding and sewage problems. Today water quality still remains poor despite the removal of untreated sewage from the river system. Sandy-bottomed streams have turned into silt-laden ditches, the banks of which are continuously collapsing in many areas as



Figure 1.5: Chicago River, ca. 1915, photographer unknown



Figure 1.6: Before and After Views of the Skokie River, Greenbelt Forest Preserve, 1982/1984, Stephen Christy

the volume and speed of water continue to erode the river channels themselves. Without changes in traditional development patterns and an effort to protect the remaining floodplain as open space for water storage, flooding is only expected to intensify as the watershed continues to develop.

While existing regulatory controls have reduced the potential for negative impacts from new development, additional tools are needed. Clearly preserving more of the watershed's most rapidly dwindling resource — open space — is key to the health of both the watershed and all its inhabitants. That is the subject of this open space plan.

Sidebar

Planning Process:

The open space plan development process included the following tasks:

- Develop the project scope
- Hire a consultant to develop an open space inventory and plan
- Form an open space planning committee
- Establish goals and objectives
- Inventory open space
- Develop and organize prioritization criteria
- Prioritize all open space
- Create an open space plan
- Create implementation and management guidelines for the plan

Goals and Objectives

This open space plan is a tool to implement the goals, objectives and action recommendations included in the Watershed Plan. As such, a number of the open space plan goals and objectives are based on the goals, objectives and action recommendations included in the Watershed Plan (*see sidebars below*). These goals and objectives (*listed below*) were refined through meetings and facilitated discussions with the planning committee, then approved by consensus.

Stakeholder: Any party (individual, public entity, conservation group, etc.) with an interest in the outcome of this plan.

Goal 1: Preserve open space in the North Branch Chicago River watershed.

Objectives:

1. Develop a parcel-based inventory of vacant land and open space for the watershed.
2. Identify open space parcels communities have designated for future development.
3. Protect a total of 15,162 acres in the watershed as open space (to meet the “25% of watershed” objective in the watershed plan).
4. Protect 9,098 acres (of the total 15,162 acres) of open space in the watershed as conservation open space (to meet the “15% of watershed” objective in the watershed plan).
5. Add 1,983 acres of land in the watershed (of the total 15,162 acres) to the Lake County Forest Preserve District (LCFPD) by 2020 (to meet their goal of 40 acres per 1000 people).
6. Adopt conservation design standards for all new development in designated high priority open space areas to maximize protection of open space in new developments.

Relevant North Branch of the Chicago River Watershed Assessment and Management Plan Goals, Objectives and Action Recommendations:

Goal: Protect and restore natural resources and provide associated recreational benefits.

Objective 2: Maintain a minimum of 25% of watershed in connected open space and 15% of the watershed in protected conservation use.

Preventative Actions:

- Designate and map a connected open space network for the North Branch watershed to be adopted as an amendment to this plan.
- Work with municipalities and county agencies to adopt and incorporate the open space network in municipal and county land use plans and maps. Encourage separate zoning class for land in open space network, or develop open space zoning overlay that requires conservation developments.
- Develop coordinated program to protect remaining high-quality natural sites through public or conservation organization acquisition or conservation easements.

Sidebar

Goal 2: Reduce flood damage.

Objectives:

1. Inventory undeveloped floodplain that is not currently protected from development.
2. Prevent flood damage from worsening by maintaining all undeveloped floodplain as open space.
3. Identify open space parcels suitable for wetland restoration, detention basins and/or flood storage that are adjacent to or near known flood problem areas.

Relevant North Branch of the Chicago River Watershed Assessment and Management Plan Goals, Objectives and Action Recommendations:

Goal: Reduce flood damage in the North Branch of the Chicago River watershed.

Objective 1: Reduce flow rates and volume.

Remedial Actions:

- Identify opportunity sites for installing new multi-objective detention basins on vacant lots or in parks.

Objective 2: Protect and restore floodplain functions.

Preventative Actions:

- Acquire (purchase, donation, or conservation easements) remaining undeveloped wetlands and floodplains.
- Protect wetlands and floodplains using land use management techniques such as a special zoning classification and/or more stringent restrictions on floodplain development in the WDO.

Goal 3: Improve water quality.

Objectives:

1. Protect/restore riparian greenways/buffers along and around all water resources.
2. Identify open space parcels in proximity to water resources that are suitable for best management practices to infiltrate or filter stormwater runoff.
3. Install best management practices on parcels with open space that include or are adjacent to non-point source pollution hotspots or pollution point sources (*National Pollutant Discharge Elimination System permitted facilities*).

Goal 4: Protect high quality natural areas as open space.

Objectives:

1. Identify open space parcels with high biodiversity or the potential for high biodiversity.
2. Provide buffer parcels for sites with threatened or endangered species.
3. Protect high quality wetlands, Illinois Nature Preserves and Illinois Natural Inventory sites from the impacts of on-site or adjacent development.
4. Permanently protect all sites with high quality natural communities, high biodiversity and threatened or endangered species.

Relevant North Branch of the Chicago River Watershed Assessment and Management Plan Goals, Objectives and Action Recommendations:

Goal: Improve water quality in the North Branch of the Chicago River.

Objective 1: Reduce non-point and point source pollution loading to the North Branch to achieve a “good” or “B” stream quality ranking by the year 2010.

Remedial Actions:

- Identify demonstration sites for application of water quality filters.
- Prioritize and retrofit outfalls to add water quality treatment/created wetland pockets or filters (vegetative, sand or others).

Preventative Actions:

- Maintain open space and install best management practices that infiltrate and treat all stormwater runoff on-site. Use voluntary incentives and regulatory requirements for implementation.

Goal 5: Protect/Enhance habitat.

Objectives:

1. Identify opportunities for habitat improvement on existing open space and partially open space parcels such as business parks, schools and other institutions, forest preserves, parks and golf courses.
2. Connect open space areas with conservation corridors.
3. Educate the public on the benefits and goals of habitat restoration.

Relevant North Branch of the Chicago River Watershed Assessment and Management Plan Goals, Objectives and Action Recommendations:

Goal: Protect and restore natural resources and provide associated recreational opportunities.

Objective 1: Protect and restore wetlands and streams to achieve no-net loss in functionality, quantity and quality of wetland acres by the year 2000, and a net gain by the year 2004.

Remedial Actions:

- Prioritize potential wetland restoration sites based on benefits derived from location, landowner cooperation, and fundability.

Objective 3: Protect and enhance biodiversity in plant communities and animal populations that includes no-net loss of threatened and endangered species or designated Illinois Natural Areas and Nature Preserves.

Preventative Actions:

- Map areas of high biodiversity in the watershed, and areas needed to maintain or improve biodiversity, and provide to local land use planning agencies.
- Identify opportunities for acquisition or easements on land adjacent to, or upstream of, high quality sites to serve as buffer.

Objective 4: Identify and develop opportunities for river-based recreation such as hiking, fishing, canoeing, running and biking.

- Develop partnership with municipalities, park districts, schools and forest preserve district to prioritize and coordinate implementation of Northeastern Illinois greenways and trails recommendations

Sidebar

Goal 6: Improve recreation and education opportunities in under-served areas and provide for a growing population.

Objectives:

1. Provide east-west and north-south trail connections within and between communities and institutions, and to established regional trails.
2. Identify current and future active and passive recreation needs and match with appropriate open space areas.
3. Identify open space parcels adjacent to or near schools or existing public facilities that would be appropriate for outdoor education and recreation.

Goal 7: Integrate and coordinate open space protection at the watershed scale.

Objectives:

1. Prioritize open and partially open space parcels at the watershed scale that need to be maintained and protected to meet the current and future needs of watershed communities.
2. Generate community support and improve public relations by creating awareness in communities within the watershed prior to work.
3. Identify open space and partially open space parcels that include an archeological site, historic building or that are a cultural resource.
4. Develop a variety of open space preservation strategies that are flexible to meet the demands of landowners and maximize funding alternatives for different types and priorities of open space, and that balance private property rights with the public interest.
5. Provide a management vehicle for implementing the open space plan, and for monitoring progress on its implementation.

The objectives listed above shaped how this plan was completed and guided the development of management recommendations and the design of the proposed greenway and trails system. In the years to come, they will also serve as ‘yardsticks’ for measuring implementation progress.

Noteworthy

Elawa Farm was a gentleman’s farm constructed by A. Watson Armour in 1917. It is made up of a complex of colonial revival buildings designed by the renowned Alfred Hopkins and David Adler and is one of the last remaining and intact examples of estate farm architecture in the Midwest. In addition to its architectural significance, Elawa is also known for its natural resource heritage. It is located adjacent to the ecologically significant Middlefork Savanna owned by the Lake County Forest Preserve District.



Upon its sale in 1998, Lake Forest Open Lands led a collaboration that included the City of Lake Forest, the Forest Preserve District and a private developer to maintain 120 acres of the 200 acre Elawa farm as protected open space. Open Lands sold 60 of the 120 acres of protected open space to the Forest Preserve District and is presently restoring the 60 acres it still holds. The City of Lake Forest purchased 16 acres of the farm including the historic complex of farm buildings where preservation and restoration are underway. The

remainder of the farm (land located closest to Waukegan Road) has been developed into an upscale subdivision. Developing this portion of the land provided the financing for Open Lands to protect the majority of the farm as open space.



Figures 1.7, 1.8: Elawa farm sign and original house